

**United States Environmental Protection Agency  
Region 7  
901 N. 5th Street  
Kansas City, KS 66101**

**Date:** SEP 25 2009

**Subject:** Transmittal of Sample Analysis Results for ASR #: 4602

Project ID: BMA71700

Project Description: Herculaneum Pb Smelter site - Removal Support/Recontamination soil sampling

**From:** Michael F. Davis, Chief *W 9/28/09*  
Chemical Analysis and Response Branch, Environmental Services Division

**To:** Bruce Morrison  
SUPR/FFSE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.



**Project Manager:** Bruce Morrison**Org:** SUPR/FFSE**Phone:** 913-551-7755**Project ID:** BMA71700**Project Desc:** Herculaneum Pb Smelter site - Removal Support/Recontamination soil sampling**Location:** Herculaneum**State:** Missouri**Program:** Superfund**Site Name:** HERCULANEUM LEAD SMELTER SITE - SITE  
EVALUATION/DISPOSITION**Site ID:** A717 **Site OU:** 00  
**GPRA PRC:** 302DC6C**Purpose:** Site Cleanup Support**Explanation of Codes, Units and Qualifiers used on this report****Sample QC Codes:** QC Codes identify the type of sample for quality control purpose.**Units:** Specific units in which results are reported.

\_\_\_ = Field Sample

% = Percent

mg/kg = Milligrams per Kilogram

**Data Qualifiers:** Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank)= Values have been reviewed and found acceptable for use.

**ASR Number: 4602****Sample Information Summary****09/25/2009****Project ID: BMA71700****Project Desc: Herculaneum Pb Smelter site - Removal  
Support/Recontamination soil sampling**

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	—	Solid	HER-RS-21 (Q3)		07/28/2009	13:00			08/25/2009
2 -	—	Solid	HER-RS-22 (Q2)		07/29/2009	14:00			08/25/2009
3 -	—	Solid	HER-RS-23 (Q1)		07/29/2009	08:00			08/25/2009
4 -	—	Solid	HER-RS-24 (Q1)		07/29/2009	08:00			08/25/2009
5 -	—	Solid	HER-RS-25 (Q1)		07/30/2009	09:00			08/25/2009
6 -	—	Solid	HER-RS-26 (Q3)		08/12/2009	13:00			08/25/2009
7 -	—	Solid	HER-RS-27 (Q4)		08/12/2009	15:00			08/25/2009
8 -	—	Solid	HER-RS-28 (Q4)		08/13/2009	13:00			08/25/2009
9 -	—	Solid	HER-RS-29 (Q2)		08/14/2009	09:00			08/25/2009
10 -	—	Solid	HER-RS-30 (Q1)		08/12/2009	09:00			08/25/2009
11 -	—	Solid	HER-RS-31 (P.A.)		08/07/2009	10:00			08/25/2009
12 -	—	Solid	HER-RS-32 (Q4)		08/07/2009	10:00			08/25/2009

**ASR Number:** 4602

**RLAB Approved Analysis Comments**

**09/25/2009**

**Project ID:** BMA71700

**Project Desc** Herculaneum Pb Smelter site - Removal  
Support/Recontamination soil sampling

---

**Analysis      Comments About Results For This Analysis**

---

**1    Metals in Solids by ICP**

**Lab:** Region 7 EPA Laboratory - Kansas City, Ks.

**Method:** EPA Region 7 RLAB Method 3122.3C

**Basis:** Dry

**Samples:** 1-\_\_      2-\_\_      3-\_\_      4-\_\_      5-\_\_      6-\_\_      7-\_\_  
                 8-\_\_      9-\_\_      10-\_\_      11-\_\_      12-\_\_

**Comments:**  
(N/A)

**1    Percent Solid**

**Lab:** Region 7 EPA Laboratory - Kansas City, Ks.

**Method:** EPA Region 7 RLAB Method 3142.9E

**Basis:** N/A

**Samples:** 1-\_\_      2-\_\_      3-\_\_      4-\_\_      5-\_\_      6-\_\_      7-\_\_  
                 8-\_\_      9-\_\_      10-\_\_      11-\_\_      12-\_\_

**Comments:**  
(N/A)

**ASR Number:** 4602

**RLAB Approved Sample Analysis Results**

**09/25/2009**

**Project ID:** BMA71700

**Project Desc:** Herculaneum Pb Smelter site - Removal  
Support/Recontamination soil sampling

**Analysis/ Analyte**

**Units                      1-\_\_                      2-\_\_                      3-\_\_                      4-\_\_**

**1 Metals in Solids by ICP**

Lead	mg/kg	158	194	170	97.2
------	-------	-----	-----	-----	------

**1 Percent Solid**

Solids, percent	%	86.4	95.9	96.9	96.2
-----------------	---	------	------	------	------

**ASR Number:** 4602

**RLAB Approved Sample Analysis Results**

**09/25/2009**

**Project ID:** BMA71700

**Project Desc:** Herculaneum Pb Smelter site - Removal  
Support/Recontamination soil sampling

**Analysis/ Analyte**

**Units**

**5-\_\_**

**6-\_\_**

**7-\_\_**

**8-\_\_**

**1 Metals in Solids by ICP**

Lead

mg/kg

431

463

37.4

75.0

**1 Percent Solid**

Solids, percent

%

96.5

86.2

94.1

93.6

**ASR Number:** 4602

**RLAB Approved Sample Analysis Results**

**09/25/2009**

**Project ID:** BMA71700

**Project Desc:** Herculaneum Pb Smelter site - Removal  
Support/Recontamination soil sampling

**Analysis/ Analyte**

**Units**

**9-\_\_**

**10-\_\_**

**11-\_\_**

**12-\_\_**

**1 Metals in Solids by ICP**

Lead

mg/kg

118

152

87.6

46.7

**1 Percent Solid**

Solids, percent

%

89.2

89.0

85.4

83.5

**CHAIN OF CUSTODY RECORD  
ENVIRONMENTAL PROTECTION AGENCY REGION VII**

ACTIVITY LEADER(Print) <u>Bruce Morrison</u>	NAME OF SURVEY OR ACTIVITY <u>Herculaneum Lead Smelter Site - Recontamination</u>	DATE OF COLLECTION DAY MONTH YEAR 1    1    1	SHEET 1 of 1
---	--	---	-----------------

**CONTENTS OF SHIPMENT**

SAMPLE NUMBER	TYPE OF CONTAINERS				VOA SET (2 VIALS EA)	SAMPLED MEDIA					RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	<u>Whirl Pak</u> CUBITAINER	BOTTLE	BOTTLE	BOTTLE		water	soil	sediment	dust	other	
4602 - 1	X					X					
- 2											
- 3											
- 4											
- 5											
- 6											
- 7											
- 8											
- 9											
- 10											
- 11											
- 12											

Complete

Samples Rec'd in Fed Exp. box no ice. Ok per PM

DESCRIPTION OF SHIPMENT <u>12</u> PIECE(S) CONSISTING OF <u>1</u> BOX(ES) ICE CHEST(S): OTHER _____	MODE OF SHIPMENT <input checked="" type="checkbox"/> COMMERCIAL CARRIER: <u>7978 7163 8257</u> <input type="checkbox"/> COURIER <input type="checkbox"/> SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)
---	--

PERSONNEL CUSTODY RECORD			
RELINQUISHED BY (SAMPLER) <u>Bruce Morrison</u>	DATE <u>8-24-91</u>	TIME <u>0800</u>	RECEIVED BY <u>Nicole Roddy</u>
<input checked="" type="checkbox"/> SEALED      UNSEALED <input type="checkbox"/>			<input checked="" type="checkbox"/> SEALED      UNSEALED <input type="checkbox"/>
REASON FOR CHANGE OF CUSTODY <u>Analysis</u>			
RELINQUISHED BY	DATE	TIME	RECEIVED BY
<input type="checkbox"/> SEALED      UNSEALED <input type="checkbox"/>			<input type="checkbox"/> SEALED      UNSEALED <input type="checkbox"/>
REASON FOR CHANGE OF CUSTODY			
RELINQUISHED BY	DATE	TIME	RECEIVED BY
<input type="checkbox"/> SEALED      UNSEALED <input type="checkbox"/>			<input type="checkbox"/> SEALED      UNSEALED <input type="checkbox"/>
REASON FOR CHANGE OF CUSTODY			



**Sample Collection Field Sheet**  
**US EPA Region 7**  
**Kansas City, KS**

**ASR Number:** 4602   **Sample Number:** 1   **QC Code:** \_\_\_\_   **Matrix:** Solid   **Tag ID:** 4602-1-\_\_\_\_

**Project ID:** BMA71700                      **Project Manager:** Bruce Morrison  
**Project Desc:** Herculaneum Pb Smelter site - Removal Support/Recontamination soil sampling  
                    **City:** Herculaneum                      **State:** Missouri  
**Program:** Superfund  
**Site Name:** HERCULANEUM LEAD SMELTER SITE - SITE                      **Site ID:** A717   **Site OU:** 00  
                    EVALUATION/DISPOSITION

**Location Desc:** HER-RS-21  
**External Sample Number:** RS-21

**Expected Conc:** \_\_\_\_\_ (or Circle One: Low Medium High)                      **Date**                      **Time(24 hr)**  
**Latitude:** \_\_\_\_\_                      **Sample Collection: Start:** 7/28/09                      13:00  
**Longitude:** \_\_\_\_\_                      **End:**   /  /                          :  

**Laboratory Analyses:**

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	180 Days	1 Metals in Solids by ICP
0 -	4 Deg C	0 Days	1 Percent Solid

**Sample Comments:**

(N/A)

Q3 128 ppm Lead  
Niton 1544

**Sample Collected By:** AMP

**Sample Collection Field Sheet**  
**US EPA Region 7**  
**Kansas City, KS**

**ASR Number:** 4602   **Sample Number:** 2   **QC Code:** \_\_\_\_   **Matrix:** Solid   **Tag ID:** 4602-2-\_\_\_\_

**Project ID:** BMA71700                      **Project Manager:** Bruce Morrison  
**Project Desc:** Herculaneum Pb Smelter site - Removal Support/Recontamination soil sampling  
                    **City:** Herculaneum                      **State:** Missouri  
**Program:** Superfund  
**Site Name:** HERCULANEUM LEAD SMELTER SITE - SITE                      **Site ID:** A717   **Site OU:** 00  
                    EVALUATION/DISPOSITION

**Location Desc:** HER-RS-22  
**External Sample Number:** RS-22

**Expected Conc:** \_\_\_\_\_ (or Circle One: Low Medium High)                      **Date**                      **Time(24 hr)**  
**Latitude:** \_\_\_\_\_                      **Sample Collection: Start:** 7/29/09                      14:00  
**Longitude:** \_\_\_\_\_                      **End:**   /  /                          :  

**Laboratory Analyses:**

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	180 Days	1 Metals in Solids by ICP
0 -	4 Deg C	0 Days	1 Percent Solid

**Sample Comments:**

(N/A)

Q2      195 ppm Lead  
Niton 1544

**Sample Collected By:** AMP

**Sample Collection Field Sheet**  
**US EPA Region 7**  
**Kansas City, KS**

**ASR Number:** 4602    **Sample Number:** 3    **QC Code:** \_\_\_\_    **Matrix:** Solid    **Tag ID:** 4602-3-\_\_\_\_

**Project ID:** BMA71700    **Project Manager:** Bruce Morrison  
**Project Desc:** Herculaneum Pb Smelter site - Removal Support/Recontamination soil sampling  
**City:** Herculaneum    **State:** Missouri  
**Program:** Superfund  
**Site Name:** HERCULANEUM LEAD SMELTER SITE - SITE EVALUATION/DISPOSITION    **Site ID:** A717    **Site OU:** 00

**Location Desc:** HER-KS-23  
**External Sample Number:** KS-23

**Expected Conc:** (or Circle One: Low Medium High)    **Date**    **Time(24 hr)**  
**Latitude:** \_\_\_\_    **Sample Collection: Start:** 7/29/09    08:00  
**Longitude:** \_\_\_\_    **End:** \_\_\_\_/\_\_\_\_/\_\_\_\_    \_\_\_\_:\_\_\_\_

**Laboratory Analyses:**

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	180 Days	1 Metals in Solids by ICP
0 -	4 Deg C	0 Days	1 Percent Solid

**Sample Comments:**

(N/A)

Q1 145 ppm Lead  
Nifon 1544

**Sample Collected By:** AMP

**Sample Collection Field Sheet**  
**US EPA Region 7**  
**Kansas City, KS**

**ASR Number:** 4602    **Sample Number:** 4    **QC Code:** \_\_\_\_    **Matrix:** Solid    **Tag ID:** 4602-4-\_\_\_\_

**Project ID:** BMA71700    **Project Manager:** Bruce Morrison  
**Project Desc:** Herculanum Pb Smelter site - Removal Support/Recontamination soil sampling  
**City:** Herculanum    **State:** Missouri  
**Program:** Superfund  
**Site Name:** HERCULANEUM LEAD SMELTER SITE - SITE EVALUATION/DISPOSITION    **Site ID:** A717    **Site OU:** 00

**Location Desc:** HER-KS-24  
**External Sample Number:** KS-24

**Expected Conc:** \_\_\_\_\_ (or Circle One: Low Medium High)    **Date** \_\_\_\_\_    **Time(24 hr)** \_\_\_\_\_  
**Latitude:** \_\_\_\_\_    **Sample Collection: Start:** 7/29/09    08:00  
**Longitude:** \_\_\_\_\_    **End:**   /  /        :  

**Laboratory Analyses:**

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	180 Days	1 Metals in Solids by ICP
0 -	4 Deg C	0 Days	1 Percent Solid

**Sample Comments:**

(N/A)

Q1    85 ppm lead  
Niton 1544

**Sample Collected By:** AMP

**Sample Collection Field Sheet**  
**US EPA Region 7**  
**Kansas City, KS**

**ASR Number:** 4602    **Sample Number:** 5    **QC Code:** \_\_\_\_    **Matrix:** Solid    **Tag ID:** 4602-5-\_\_\_\_

**Project ID:** BMA71700    **Project Manager:** Bruce Morrison  
**Project Desc:** Herculaneum Pb Smelter site - Removal Support/Recontamination soil sampling  
**City:** Herculaneum    **State:** Missouri  
**Program:** Superfund  
**Site Name:** HERCULANEUM LEAD SMELTER SITE - SITE EVALUATION/DISPOSITION    **Site ID:** A717    **Site OU:** 00

**Location Desc:** HER-RS-25  
**External Sample Number:** RS-25

**Expected Conc:** \_\_\_\_\_ (or Circle One: Low Medium High)    **Date**    **Time(24 hr)**

**Latitude:** \_\_\_\_\_    **Sample Collection: Start:** 7/30/09    09:00

**Longitude:** \_\_\_\_\_    **End:** \_\_\_\_/\_\_\_\_/\_\_\_\_    \_\_\_\_:\_\_\_\_

**Laboratory Analyses:**

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	180 Days	1 Metals in Solids by ICP
0 -	4 Deg C	0 Days	1 Percent Solid

**Sample Comments:**

(N/A)

Q1    378 ppm Lead  
Niton 1544

**Sample Collected By:** AMP

**Sample Collection Field Sheet**  
**US EPA Region 7**  
**Kansas City, KS**

**ASR Number:** 4602    **Sample Number:** 6    **QC Code:** \_\_\_\_    **Matrix:** Solid    **Tag ID:** 4602-6-\_\_\_\_

**Project ID:** BMA71700    **Project Manager:** Bruce Morrison  
**Project Desc:** Herculanum Pb Smelter site - Removal Support/Recontamination soil sampling  
**City:** Herculanum    **State:** Missouri  
**Program:** Superfund  
**Site Name:** HERCULANEUM LEAD SMELTER SITE - SITE EVALUATION/DISPOSITION    **Site ID:** A717    **Site OU:** 00

**Location Desc:** HER-RS-26

**External Sample Number:** RS-26

**Expected Conc:** \_\_\_\_\_ (or Circle One: Low Medium High)    **Date**    **Time(24 hr)**

**Latitude:** \_\_\_\_\_

**Sample Collection: Start:** 8/12/09

13.00

**Longitude:** \_\_\_\_\_

**End:** \_\_\_\_/\_\_\_\_/\_\_\_\_

\_\_\_\_:\_\_\_\_

**Laboratory Analyses:**

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	180 Days	1 Metals in Solids by ICP
0 -	4 Deg C	0 Days	1 Percent Solid

**Sample Comments:**

(N/A)

Q3

319 ppm Lead

Niton 1544

**Sample Collected By:** AMP

**Sample Collection Field Sheet**  
**US EPA Region 7**  
**Kansas City, KS**

**ASR Number:** 4602    **Sample Number:** 7    **QC Code:** \_\_\_\_    **Matrix:** Solid    **Tag ID:** 4602-7-\_\_\_\_

**Project ID:** BMA71700    **Project Manager:** Bruce Morrison  
**Project Desc:** Herculaneum Pb Smelter site - Removal Support/Recontamination soil sampling  
**City:** Herculaneum    **State:** Missouri  
**Program:** Superfund  
**Site Name:** HERCULANEUM LEAD SMELTER SITE - SITE EVALUATION/DISPOSITION    **Site ID:** A717    **Site OU:** 00

**Location Desc:** HER-RS-27  
**External Sample Number:** RS-27

**Expected Conc:** \_\_\_\_\_ (or Circle One: Low Medium High)    **Date** 8/12/09    **Time(24 hr)** 15:00  
**Latitude:** \_\_\_\_\_    **Sample Collection: Start:** 8/12/09  
**Longitude:** \_\_\_\_\_    **End:**   /  /        :  

**Laboratory Analyses:**

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	180 Days	1 Metals in Solids by ICP
0 -	4 Deg C	0 Days	1 Percent Solid

**Sample Comments:**

(N/A)

Q4    33 ppm Lead  
Niton 1544

**Sample Collected By:** AMP





**Sample Collection Field Sheet**  
**US EPA Region 7**  
**Kansas City, KS**

**ASR Number:** 4602    **Sample Number:** 9    **QC Code:** \_\_\_    **Matrix:** Solid    **Tag ID:** 4602-9-\_\_\_

**Project ID:** BMA71700    **Project Manager:** Bruce Morrison  
**Project Desc:** Herculaneum Pb Smelter site - Removal Support/Recontamination soil sampling  
**City:** Herculaneum    **State:** Missouri  
**Program:** Superfund  
**Site Name:** HERCULANEUM LEAD SMELTER SITE - SITE EVALUATION/DISPOSITION    **Site ID:** A717    **Site OU:** 00

**Location Desc:** HER-RS-29  
**External Sample Number:** RS-29  
**Expected Conc:** (or Circle One: Low Medium High)    **Date:** 8/14/09    **Time(24 hr):** 09.00  
**Latitude:** \_\_\_    **Sample Collection: Start:** 8/14/09  
**Longitude:** \_\_\_    **End:** \_\_\_/\_\_\_/\_\_\_    \_\_\_:\_\_\_

**Laboratory Analyses:**

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	180 Days	1 Metals in Solids by ICP
0 -	4 Deg C	0 Days	1 Percent Solid

**Sample Comments:**

(N/A)

Q2    97 ppm Lead  
Niton 1544

**Sample Collected By:** AMP

**Sample Collection Field Sheet**  
**US EPA Region 7**  
**Kansas City, KS**

**ASR Number:** 4602   **Sample Number:** 10   **QC Code:** \_\_\_\_   **Matrix:** Solid   **Tag ID:** 4602-10-\_\_\_\_

**Project ID:** BMA71700                      **Project Manager:** Bruce Morrison  
**Project Desc:** Herculanum Pb Smelter site - Removal Support/Recontamination soil sampling  
                    **City:** Herculanum                      **State:** Missouri  
**Program:** Superfund  
**Site Name:** HERCULANEUM LEAD SMELTER SITE - SITE                      **Site ID:** A717   **Site OU:** 00  
                    EVALUATION/DISPOSITION

**Location Desc:** HER-RS-30  
**External Sample Number:** RS-30

**Expected Conc:** \_\_\_\_\_ (or Circle One: Low Medium High)                      **Date**                      **Time(24 hr)**  
**Latitude:** \_\_\_\_\_                      **Sample Collection: Start:** 8/12/09                      09:00  
**Longitude:** \_\_\_\_\_                      **End:**   /  /                          :  

**Laboratory Analyses:**

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	180 Days	1 Metals In Solids by ICP
0 -	4 Deg C	0 Days	1 Percent Solid

**Sample Comments:**

(N/A)

Q1      115 ppm lead  
Niton 1544

**Sample Collected By:** AMP

**Sample Collection Field Sheet**  
**US EPA Region 7**  
**Kansas City, KS**

**ASR Number:** 4602   **Sample Number:** 11   **QC Code:** \_\_\_\_   **Matrix:** Solid   **Tag ID:** 4602-11-\_\_\_\_

**Project ID:** BMA71700                      **Project Manager:** Bruce Morrison  
**Project Desc:** Herculaneum Pb Smelter site - Removal Support/Recontamination soil sampling  
**City:** Herculaneum                      **State:** Missouri  
**Program:** Superfund  
**Site Name:** HERCULANEUM LEAD SMELTER SITE - SITE                      **Site ID:** A717   **Site OU:** 00  
EVALUATION/DISPOSITION

**Location Desc:** HER-RS-31  
**External Sample Number:** RS-31

**Expected Conc:** \_\_\_\_\_ (or Circle One: Low Medium High)                      **Date**                      **Time(24 hr)**  
**Latitude:** \_\_\_\_\_                      **Sample Collection: Start:** 8/7/09                      10.00  
**Longitude:** \_\_\_\_\_                      **End:** 1/1/                      :\_

**Laboratory Analyses:**

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	180 Days	1 Metals in Solids by ICP
0 -	4 Deg C	0 Days	1 Percent Solid

**Sample Comments:**

(N/A)

P.A.      69 ppm lead  
Nitm1544

**Sample Collected By:** AMP

